

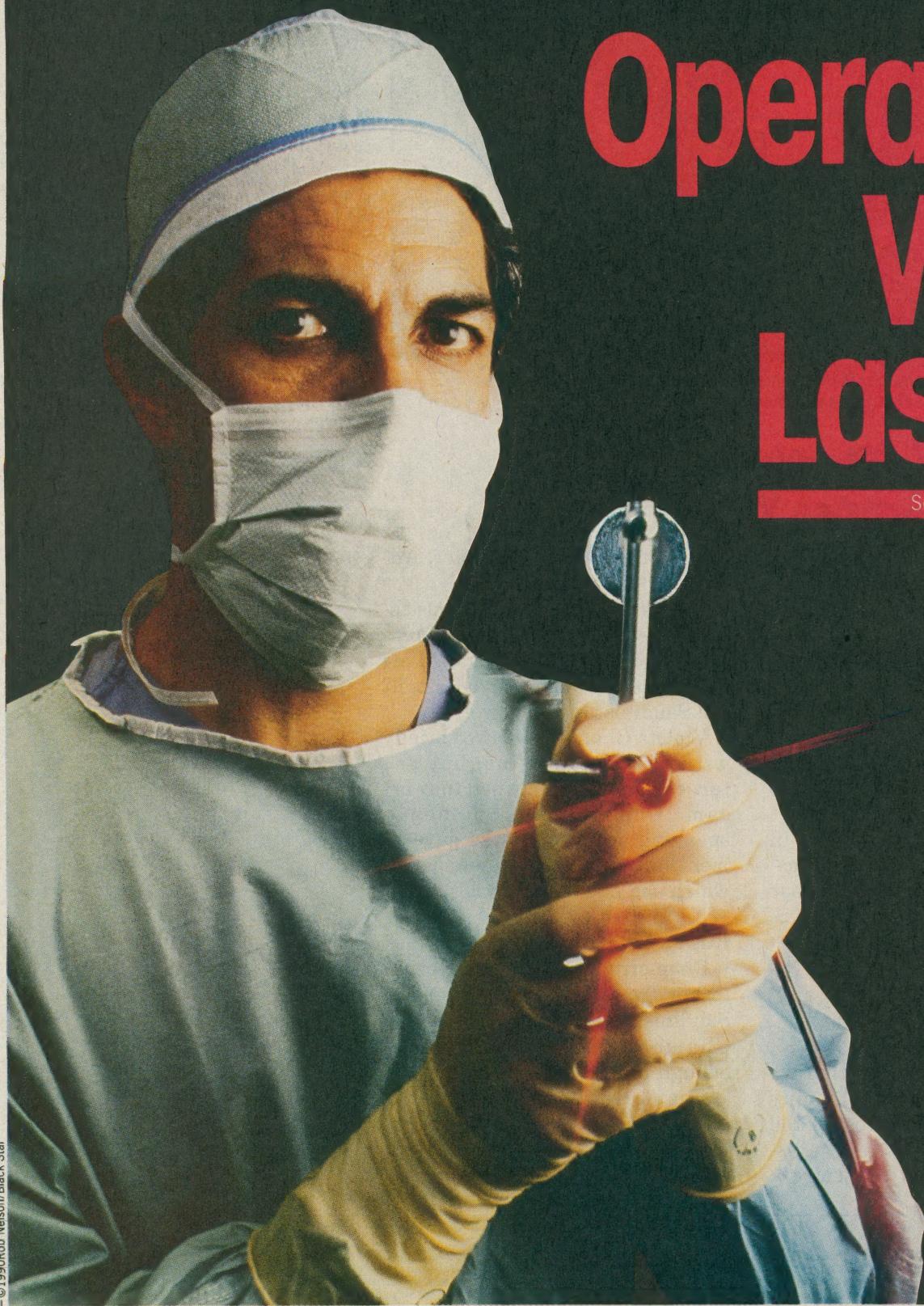
# Weekly Reader®

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Senior Edition

## Operating With Lasers

See story on pages 4-5.



Dr. Carmen Nezhat, one of the pioneers of a new kind of surgery that uses lasers and video cameras, holds some of his instruments.



### Police, Soldiers May Wear Spider-Silk Vests

U.S. Army scientists have discovered that the silk spiders spin is very strong and stretchable. The scientists say spider silk could be used to make such things as bulletproof vests and telephone cable.

Millions of spiders would be needed to spin enough silk to make these products. Even if scientists could collect enough spiders and put them to work on a silk farm, there would be one big problem. The spiders would eat each other.

But the scientists have developed a way to make spider silk without using millions of spiders.

The scientists collect the genes that cause spiders to make silk. They put the genes into bacteria—small, single-celled plants or animals. The bacteria then produce a substance that turns out spider silk faster than spiders can spin it.



Spider silk may look delicate, but it is extremely strong and flexible.

Violeta Barrios de Chamorro recently became the first woman in this century to rule a Central American country.

### Nicaragua's Elections Produce Surprise Winner

Violeta Barrios de Chamorro (vee-oh-LET-ə BAHR-yohss də cha-MOR-oh) was recently the surprise winner of the presidential election in Nicaragua, Central America.

Her upset victory brought big changes to her nation of 3 million people:

- President Daniel Ortega and his pro-Communist party, the Sandinistas, were voted out of office.
- A cease-fire was declared in the country's bitter civil war between the Sandinistas and another group called the Contras. The U.S. has often supported the Contras.
- The U.S. promised to send Nicaragua millions of dollars in aid.

#### Chamorro's Past

Chamorro has been fighting for change in her country for many years. In the 1970's, she worked with her husband, Pedro, a newspaper editor, in his struggle

against the country's dictator, Anastasio Somoza.

In 1978, Pedro Chamorro was assassinated. His death was one reason that a revolution began. This war toppled Somoza and brought the Sandinistas into power.

Violeta Chamorro worked briefly with the Sandinistas, but she turned against them when they became Communists. She began speaking out against the government in her husband's newspaper, which she had taken over.

#### Hopes for Peace

Chamorro hopes to bring peace to her troubled country. But the Sandinistas and other critics say Chamorro is not experienced enough to lead Nicaragua.

Chamorro disagrees with the critics. She says she has the ability to bring the people of her war-torn country together.

# Tiny Ticks Spread Lyme Disease

Summer is the season for playing outdoors, camping, and walking in the woods. It's also the season for Lyme disease, an illness spread by ticks as tiny as pinheads.

The kind of tick that spreads Lyme disease is called a deer tick because in the later stages of its life, it often lives off the blood of white-tailed deer. In the early stages of the tick's life, it lives off smaller animals, especially white-footed mice.

Not all deer ticks carry Lyme disease. The tick must be infected by a slender, corkscrew-shaped bacterium called a *spirochete* (spigh-rə-KEET).

An infected tick deposits the spirochete into its victim's blood when it bites. Because the tick is so small, the victim is not likely to feel the bite of the tick at all.



—©by M. Ferguson

Both ticks on the quarter are deer ticks. The one on the right has had a meal of blood. The most common kind of tick, called a dog tick, is much larger than a deer tick.

## Symptoms of Lyme Disease

The most telltale symptom of Lyme disease is a "bull's-eye" rash that starts with a small, hard, red dot where the tick bit and spreads into a wide, red circle.

If this rash appears, a victim can be treated and cured quickly. But often, the rash doesn't appear. If it doesn't, there's no surefire way for doctors to determine that a patient has Lyme disease.

There is a blood test for Lyme disease, but it doesn't often detect the disease. And other Lyme disease symptoms are easy to mistake for symptoms of other diseases. For example, victims may develop flu-like symptoms such as

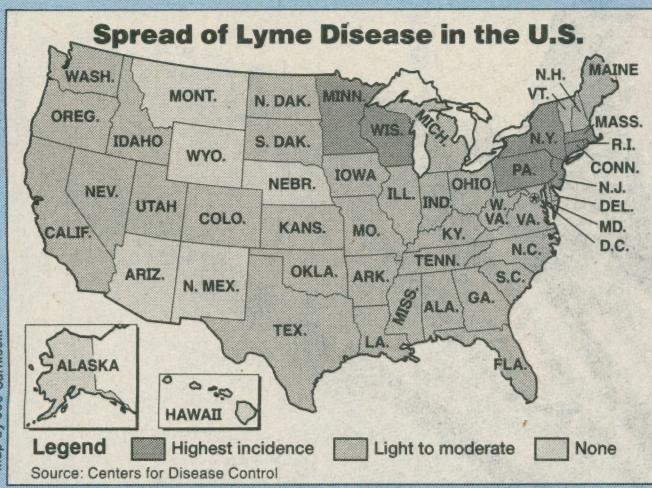
fever, headache, and dizziness. Or they may feel very tired or develop a stiff neck or swelling in body joints, especially the knees.

## Preventing Lyme Disease

Doctors say the best way to prevent Lyme disease is to avoid being bitten by a deer tick. Wear protective clothing. If you know you will be walking in tall grass, for example, pull your socks up over your pant legs.

If you live in a Lyme disease "hot spot" (see map) doctors suggest that you check your body carefully for ticks every day. Pets should also be checked because they can catch Lyme disease. Pets can also bring deer ticks into the house, where the ticks can hop onto people.

If a pet or a member of your family has been bitten, save the tick in a jar and see your veterinarian or doctor right away.



Lyme disease was first identified in 1975 in Lyme, Conn. Currently, the heaviest concentrations of deer ticks are in the Northeast and the upper Midwest.

# Operating

*"Scalpel," the doctor orders. The nurse slaps the handle of the thin, sharp knife onto the doctor's palm. The doctor grasps the scalpel carefully and makes a long slit across the patient's abdomen.*

Major operations usually start like this, with the patient "going under the knife."

But today, some doctors are performing major surgery without scalpels. These surgeons are using pinpoint beams of concentrated light called *lasers* to perform many kinds of operations. Using lasers, doctors can remove growths, repair torn body tissue, perform delicate eye surgery, and even remove freckles and tattoos.

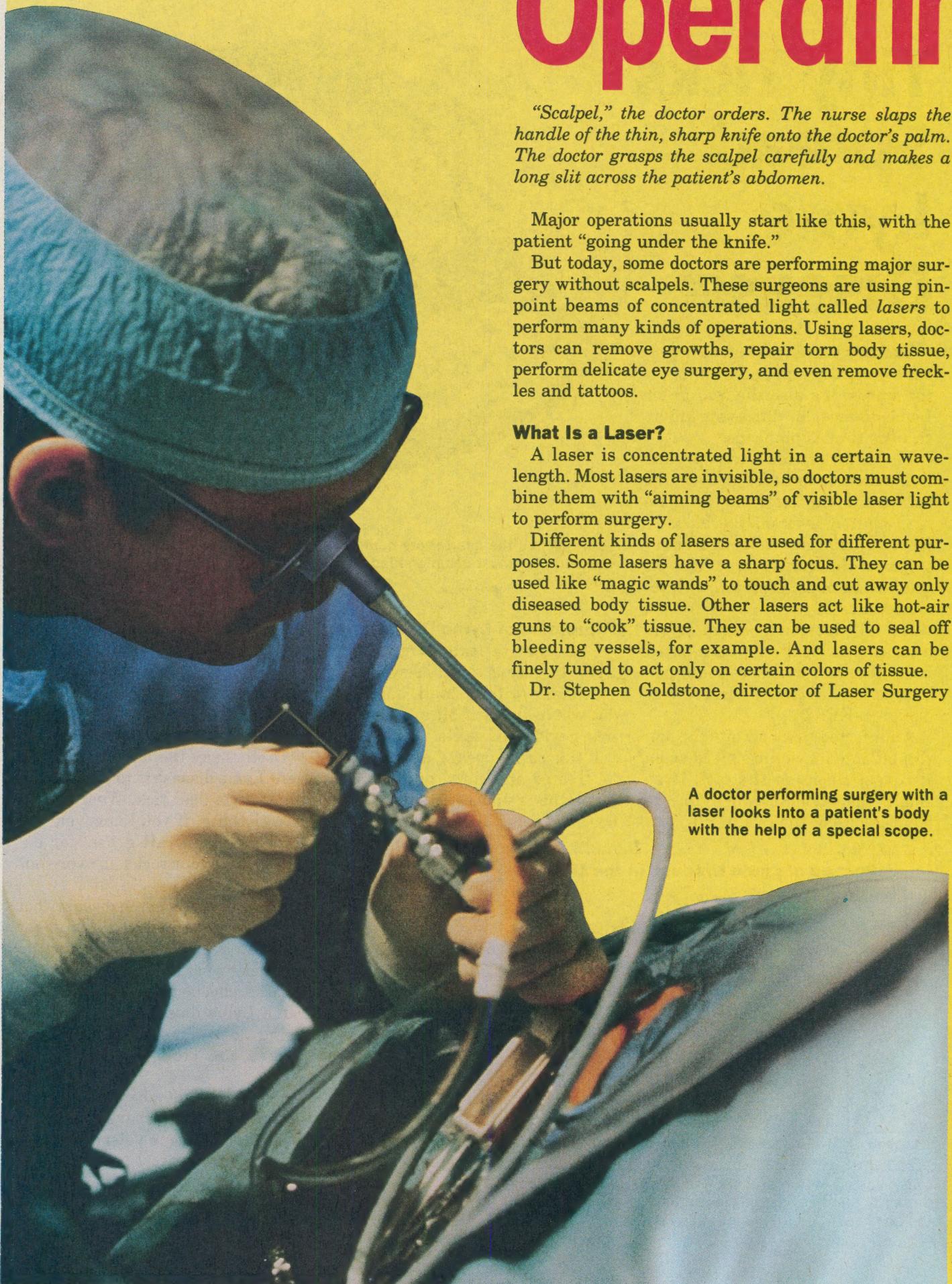
## What Is a Laser?

A laser is concentrated light in a certain wavelength. Most lasers are invisible, so doctors must combine them with "aiming beams" of visible laser light to perform surgery.

Different kinds of lasers are used for different purposes. Some lasers have a sharp focus. They can be used like "magic wands" to touch and cut away only diseased body tissue. Other lasers act like hot-air guns to "cook" tissue. They can be used to seal off bleeding vessels, for example. And lasers can be finely tuned to act only on certain colors of tissue.

Dr. Stephen Goldstone, director of Laser Surgery

A doctor performing surgery with a laser looks into a patient's body with the help of a special scope.



# g With Lasers

Care in New York City, says that he can use a laser beam to write his name on the yolk of an egg without breaking the yolk. This kind of precision allows doctors to perform very delicate surgery safely.

After surgery, the tissue touched by a laser usually doesn't swell up. "Less damage [means] less pain," Goldstone says.

## Laser Surgery by Video

Dr. Camran Nezhat of Atlanta's Northside Hospital is a pioneer in a new kind of laser surgery that uses video cameras—inside the body.

Nezhat inserts an instrument that looks like a baton through a small puncture hole in the patient's navel, or belly button. This instrument is equipped with a video camera and a laser. Other small surgical

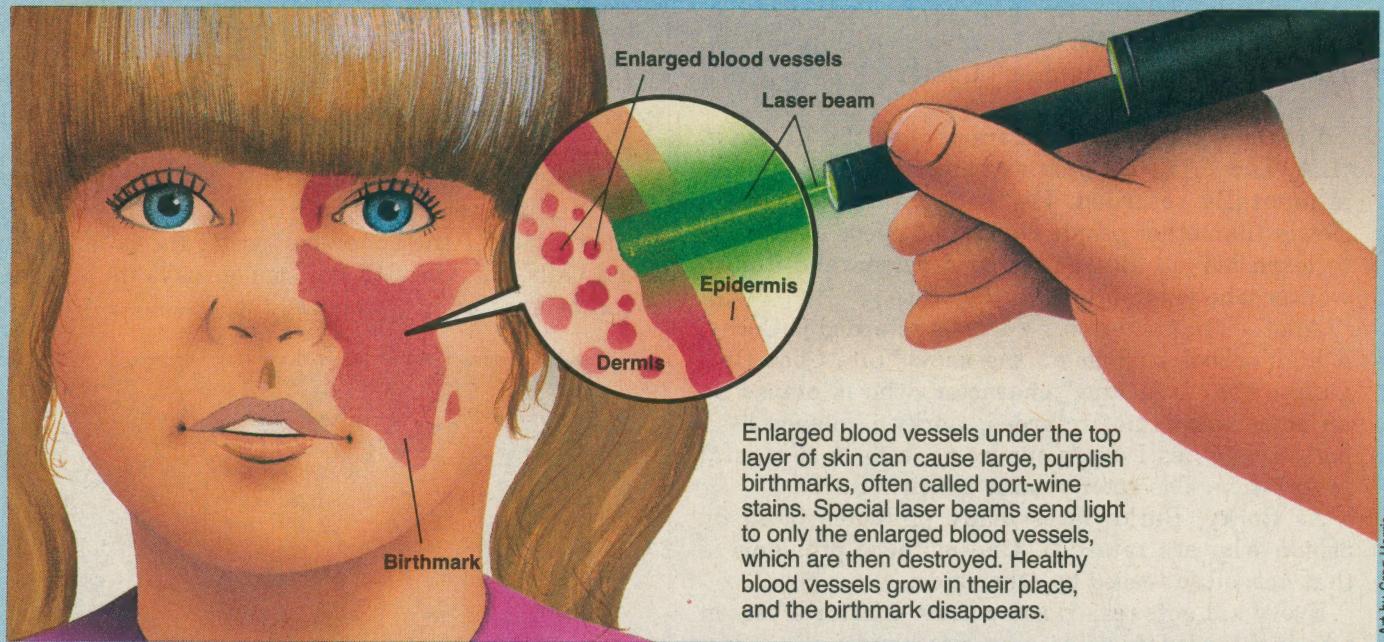
instruments are inserted through other tiny puncture holes in the patient's body. (See diagram on page 8).

Using the laser and the other instruments, Nezhat carefully performs the surgery. He watches what he is doing on four video screens that show the inside of the patient's abdomen.

## Will Lasers Replace Scalpels?

Most major hospitals have lasers, and many doctors use them in minor surgery. But some operations are easier and safer to perform with scalpels, doctors say. And, in most cases, laser surgery is very expensive.

Still, many doctors say, there may be a time when laser surgery becomes so advanced and so inexpensive that museums will be the only places people will see scalpels.



## Lasers 'Erase' Large Birthmarks

Sarah Pease, six, had a large, purplish birthmark covering one side of her face from her ear to her nose. But that birthmark is gone, thanks to a doctor named Oon Tian Tan of Boston University. Dr. Tan "erased" Sarah's birthmark with a new kind of laser surgery.

The kind of birthmark Sarah had is often called a port-wine stain because of its purplish-red color. Doctors have tried to remove these birthmarks in many ways, but these methods always left scars.

So far, Dr. Tan has used laser surgery to remove port-wine birthmarks from 35 children. Thirty-three of these patients have no scarring at all, and two have minor scars caused by the skin's being bumped too soon after surgery.

To perform the surgery, Dr. Tan uses a special laser that destroys only the enlarged blood vessels under the skin that cause the birthmarks.

Removing a port-wine stain takes about six laser sessions. At each 15-minute session, Dr. Tan uses the laser to make tiny rows of dots along the birthmark.

The patient is awake during the surgery. One adult patient who had the surgery says that the laser hitting her face felt like a rubber band being snapped against her skin.

After the surgery, the treated area of skin turns a grayish blue, then the skin flakes away. The skin underneath is a fairly bright pink, but it gradually fades to normal flesh color.



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Left: Larry Drake plays a character on "L.A. Law" who is retarded. Right: Chris Burke, who is himself retarded, plays Corky, a teen who is retarded, on "Life Goes On."

## Special People Have Special Needs

By Leon Rosenberg, Ph.D.  
The Johns Hopkins Children's Center

I really like one of the characters on the TV show, "L.A. Law." The character's name is Benny, and he is mentally retarded. He thinks and reads more slowly than other people do, and he needs extra time to learn his job. But he's a good person and a hard worker who is important in the office.

Another character on TV who is retarded is Corky, a high school student on the show "Life Goes On." Unlike the "L.A. Law" character, who is played by an actor who is not retarded, Corky is played by a person who has Down's syndrome, a form of mental retardation. The actor's name is Chris Burke.

As Corky, Burke faces many problems faced by people who are retarded. One of these problems is that he's often teased by other kids.

Every kid gets teased sometimes. But for a person who is retarded, teasing is hard to handle.

When you were very young, you learned to handle teasing in one of two ways. You ignored it, or you teased right back. You may have turned teasing into a game. Once you figured out why other kids were laughing, you could come up with a snappy comeback.

But some people who are retarded can't think that fast. They don't understand what the joke is. Instead, they take the teasing seriously. They feel other kids don't like them, and they become very unhappy.

**Remember:** When you talk to a person who is retarded, put the word *person* first in your mind. That person, just like you, wants the chance to be happy.

## New Ball Prevents Injuries

Scott Johnson, a 12-year-old Little League shortstop, stands at the plate. The pitcher throws a high, hard fastball. Before Scott can duck, the ball crashes into his helmet. Scott falls to the ground. People in the crowd gasp.

But, to everyone's surprise, Scott bounces back up quickly. He plays the rest of the game.

Scott wasn't seriously hurt because he wasn't hit by a regular baseball. The ball that hit him is called a Reduced Injury Factor (RIF) ball. This baseball is designed to produce fewer or less severe injuries when it hits a player than a regular baseball does.

Most balls used in youth baseball leagues have yarn in the middle. This yarn is wound very tight, then covered with leather. But the core of the RIF ball is made of plastic foam instead of yarn. The foam is softer than the wound yarn, so the ball doesn't cause as much damage if it hits someone.

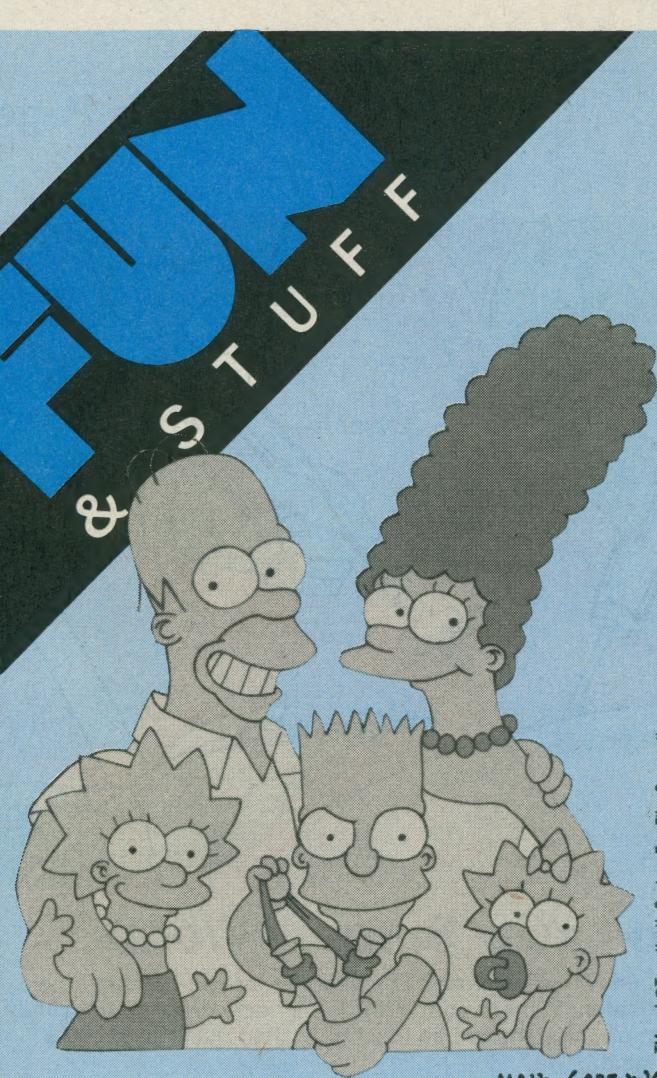
The RIF ball, made by a company called Worth Sports, is the only foam-centered ball that meets national safety standards for athletic equipment. The ball has been approved by Little League Baseball, Dixie League Baseball, and Pony League Baseball.

But even with those approvals, some coaches aren't sure they'll switch to the RIF ball. The coaches say they're afraid the softer ball won't fly as far as the old balls. But the RIF ball maker says its baseballs can be swatted just as far as the old ones.



Worth Sports Company

Los Angeles Dodger pitcher Orel Hershiser "tests" an RIF ball on his son Quinton. The RIF ball is supposed to reduce player injuries.



MATT GROENING

## The Simpsons: Not the Usual Family

Move over, Roseanne and clan. Heads up, Huxtables. The Simpsons have arrived, and they're quickly becoming one of TV's most popular families.

But the Simpsons aren't like most other families on nighttime TV—they're cartoon characters.

The Simpsons are different in other ways too.

Dad Homer always needs a shave and loves to eat Pork Rinds Lite. Mom Marge has a blue hairdo that almost scrapes the ceiling. Fourth grader Bart is a wisecracking troublemaker. Second grader Lisa is a saxophone-playing brain. And little baby Maggie crawls through life sucking on her pacifier.

Matt Groening, the cartoonist who created the Simpsons, says they are "trying to be normal." Unfortunately, Groening says, the family "doesn't have a clue" to what normal is.

Groening first drew the Simpsons for "The Tracy Ullman Show." Groening also draws a comic strip that appears in about 200 newspapers. Groening says that his drawing "pretty much stopped improving after I got out of sixth grade."

But fans of the Fox network's "The Simpsons" don't seem to mind that. They're probably having too much fun laughing with—and at—Bart, Homer, and the rest of the Simpson gang.

## Senior Sleuths

Walking downtown, Senior Sleuths Rob and Rita see Chief Henderson going the other way.

"Come along," the Chief says. "We just got robbery report. A witness saw a man running this way."

"Who's the suspect?" Rita asks.

"A man wearing a ski mask, blue jeans, and jogging shoes. We think he went into this building."

The Sleuths and the Chief enter the studios of radio station WROC. Inside, two men wearing similar jeans and shoes stare at each other.

"I'm g-g-glad you're here," says the first man. He

wipes some sweat off his brow. "This guy just ran in while I was p-p-playing the latest New Kids on the Block song."

"New Kids?" Rob asks. "They're great."

"Yeah, those four guys can really sing."

"Hey, this guy's got it wrong," the second man says. "I'm the number one disk jockey at the Big ROC."

"One thing's for sure," Rita says. "This one's a disk jockey, and this one's a crook."

**Which man does Rita suspect? Why?**

by Jim Davis

## Garfield

TOPAY I'M GOING TO WORK ON PUSH-UPS

UNNNGH

SO MUCH FOR "PUSH".  
TOMORROW WE WORK ON "UP"

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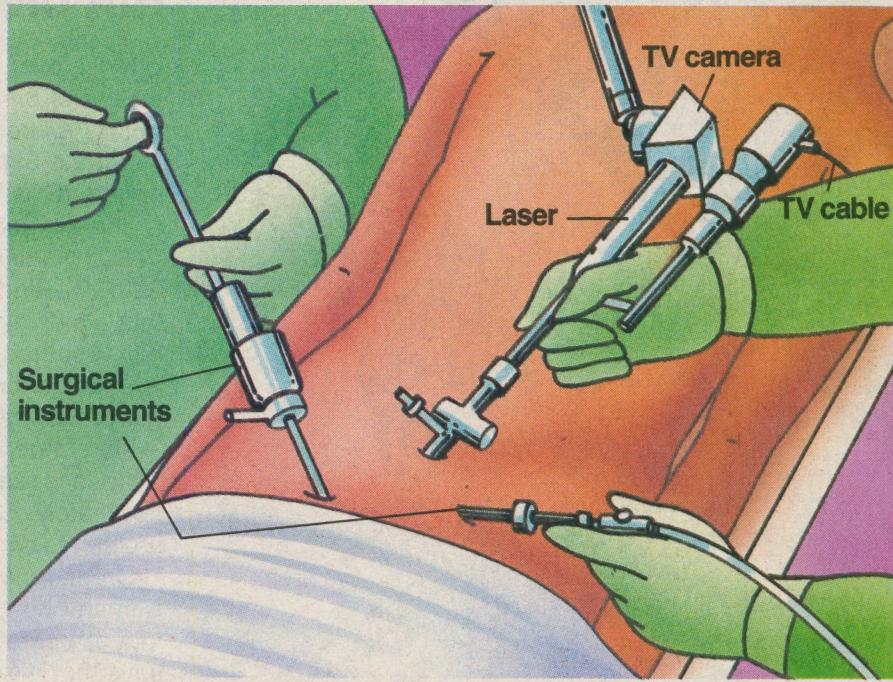
JIM DAVIS 4-15

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## Diagram Reading

Study the diagram, the caption under it, and the story on pages 4-5. Then mark *T* beside each true statement and *F* beside each false statement below.

- 1. Video-laser surgery probably leaves a long scar on a patient's abdomen.
- 2. Doctors use a VCR to perform video-laser surgery.
- 3. The laser is attached to the grasper.
- 4. Doctors see what they're doing during video-laser surgery by watching their actions on TV screens.
- 5. One surgical instrument is used both to suction out fluid and to pump fluid into the body.



## How Video-Laser Surgery Works

The instrument equipped with a laser and TV camera is inserted through the belly button. The surgical instrument on the left is a grasper used to hold body tissue. The instrument on the right can be used to suction out fluid such as blood or to pump in liquid.

## News Comprehension

Mark *F* before each statement that is a fact and *O* before each statement that is an opinion.

### Main News

- 1. In video-laser surgery, the surgeon does not make any long cuts with a scalpel.
- 2. Lasers should be used in all types of surgery.
- 3. Most laser beams are invisible.
- 4. It's a good idea to remove large birthmarks from children's faces.

### Science News

- 5. Doctors should find a better way to detect Lyme disease.
- 6. All deer ticks are not infected with the bacterium that causes Lyme disease.
- 7. Dog ticks are larger than deer ticks.

### News Update

- 8. The new president of Nicaragua is not experienced enough to lead her people.
- 9. The U.S. has supported a group called the Contras in Nicaragua.
- 10. Scientists who use spiders to make silk are cruel to spiders.

## News Vocabulary

Beside each word in the column at left, write the letter of its definition.

cease-fire	—	a. certain to get results
gene	—	b. the part of the body between the chest and the hips
surefire	—	c. a person who rules a country, usually by force
scalpel	—	d. a small cell part that controls a function in living plants or animals
wavelength	—	e. a small, straight, thin-bladed knife used in surgery
bitter	—	f. a war between groups of people living in the same country
civil war	—	g. a military order to stop firing
dictator	—	h. hateful; angry
pinpoint	—	i. a measure of light
abdomen	—	j. extremely fine or precise